



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

August 20–23, 2018
Grand Junction, Colorado

2018 Long-Term Stewardship Conference

Fernald Preserve Aquifer Restoration Project

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Navarro Research & Engineering, Inc.

Session: Track 1.5: LTS Practices and Challenges at DOE
Legacy Sites, Part 2

Contributors

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Fernald Preserve, Ohio, Site



Fernald Preserve, Ohio, Site

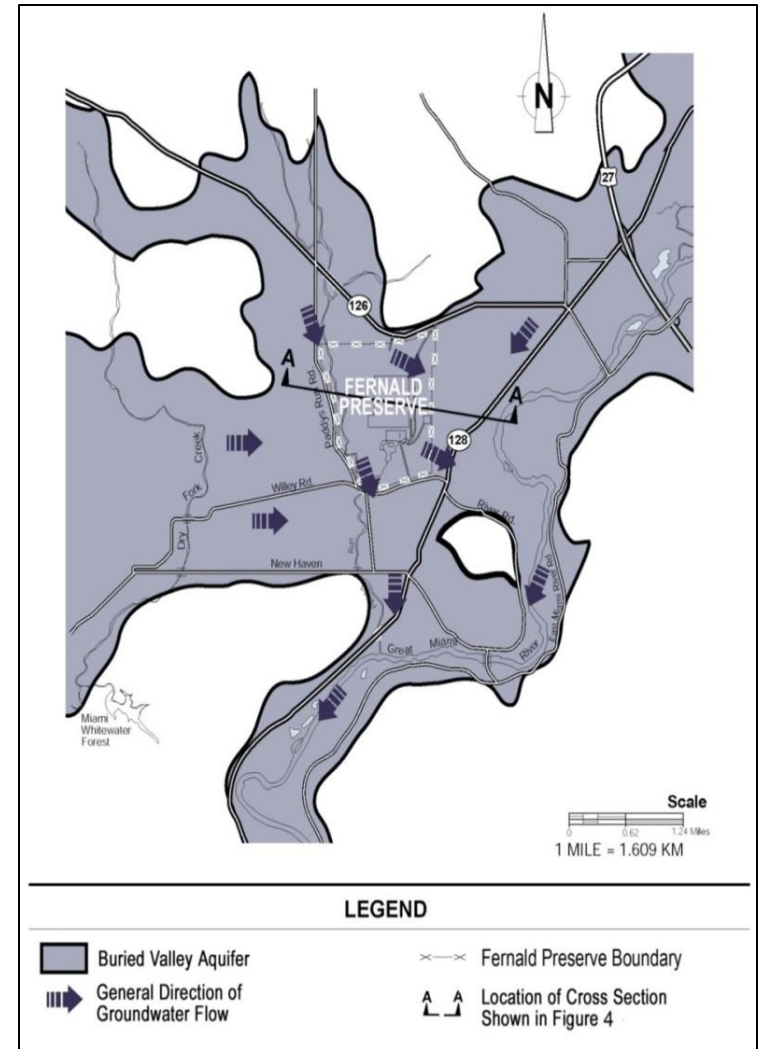
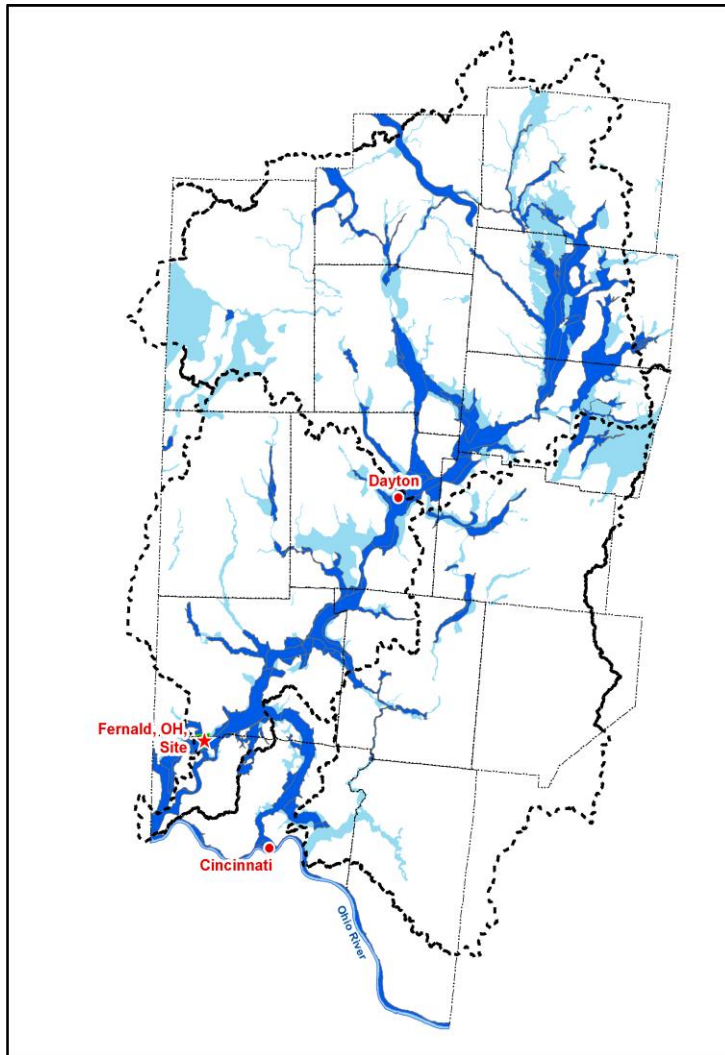


Product Versus Waste

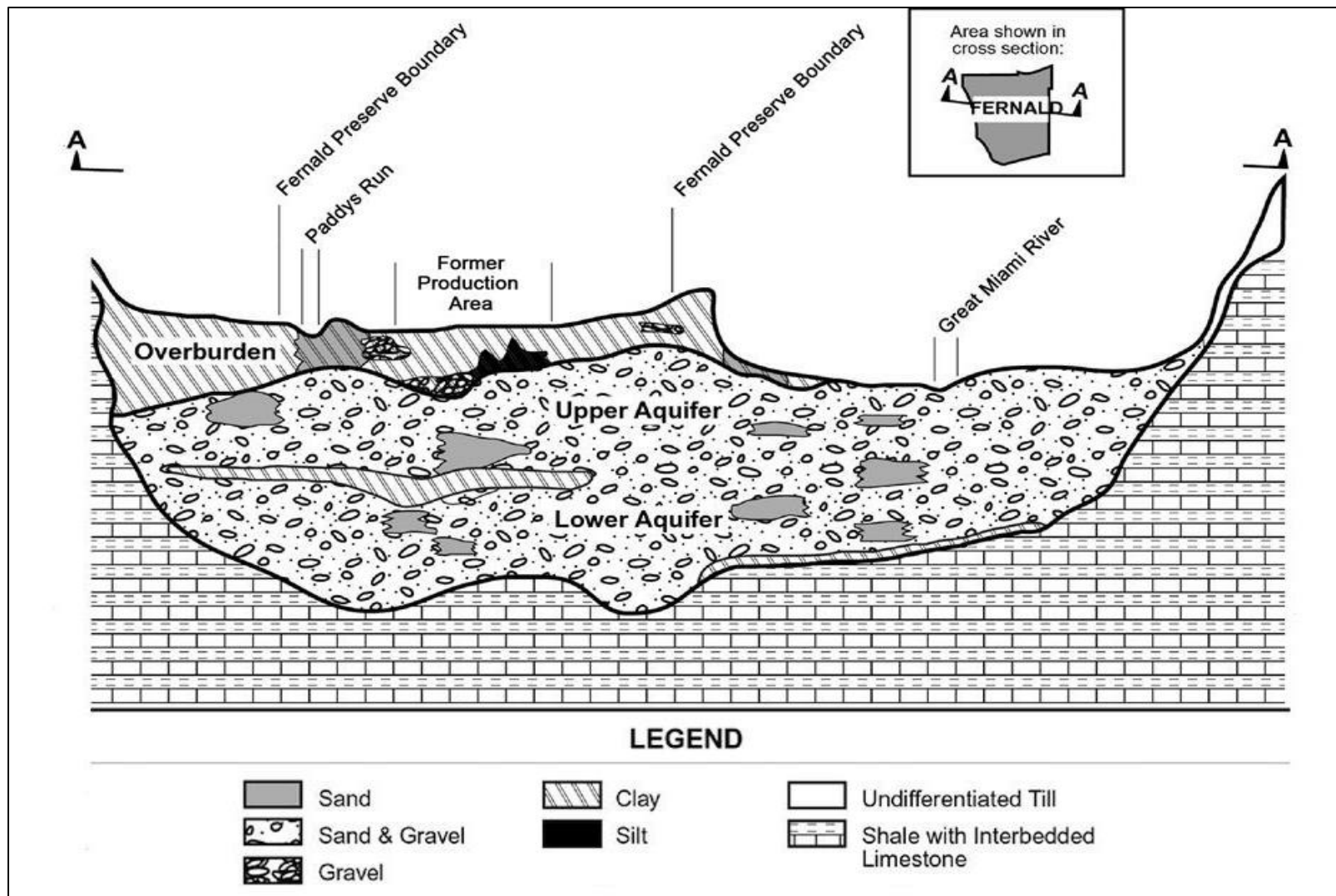
- 3 pounds of waste for every pound of product



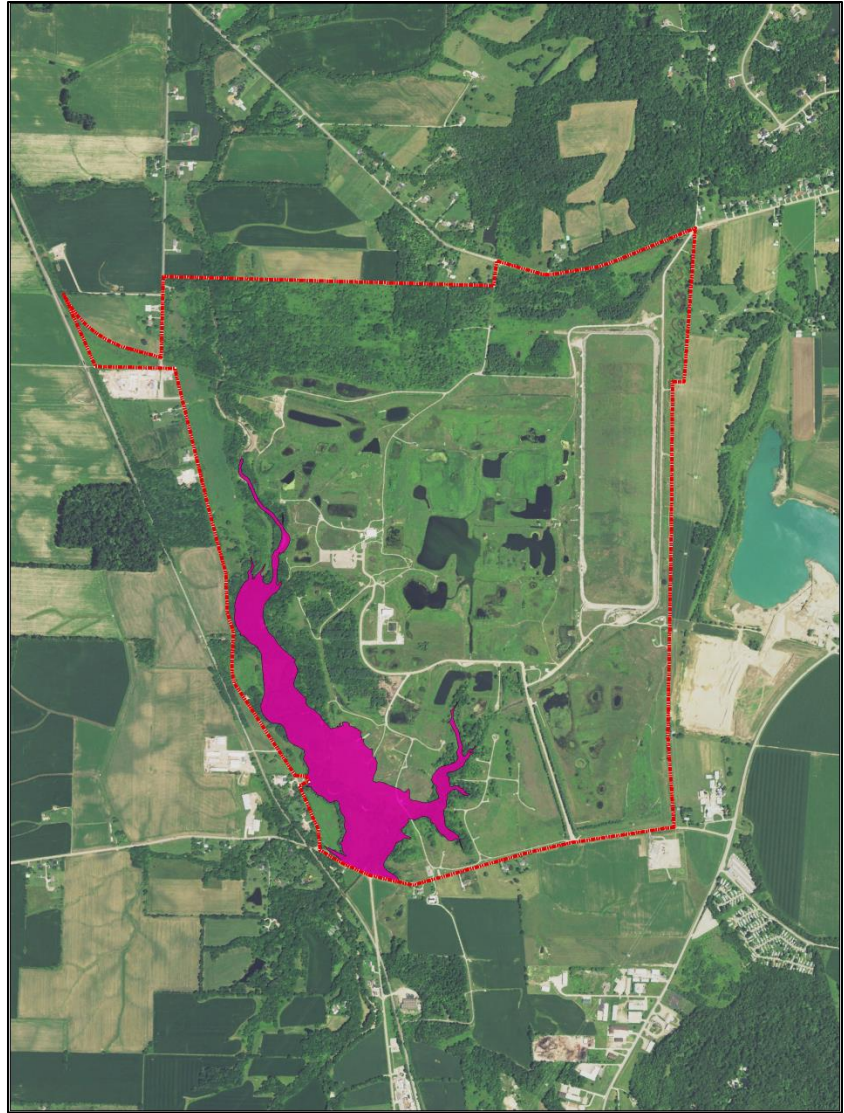
Great Miami Regional Aquifer



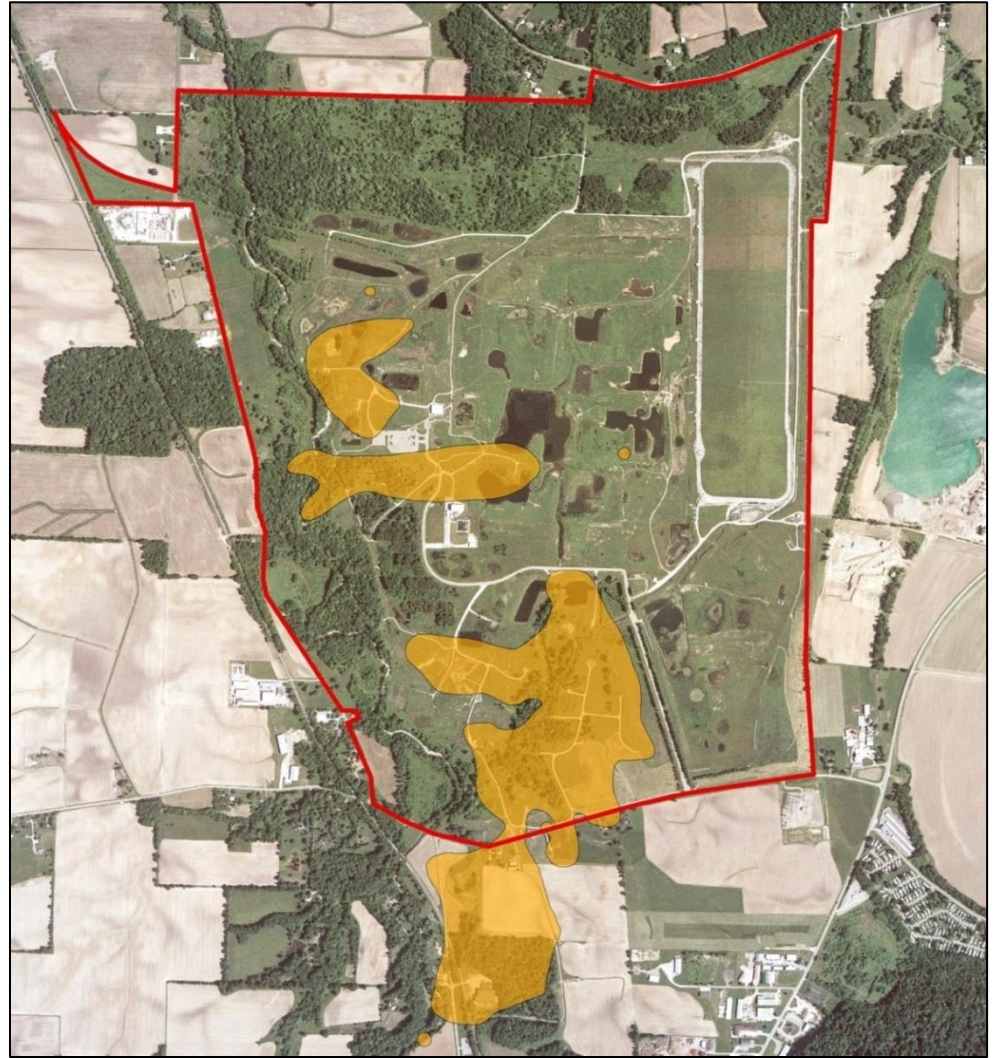
Cross Section of the Buried Valley, Looking North



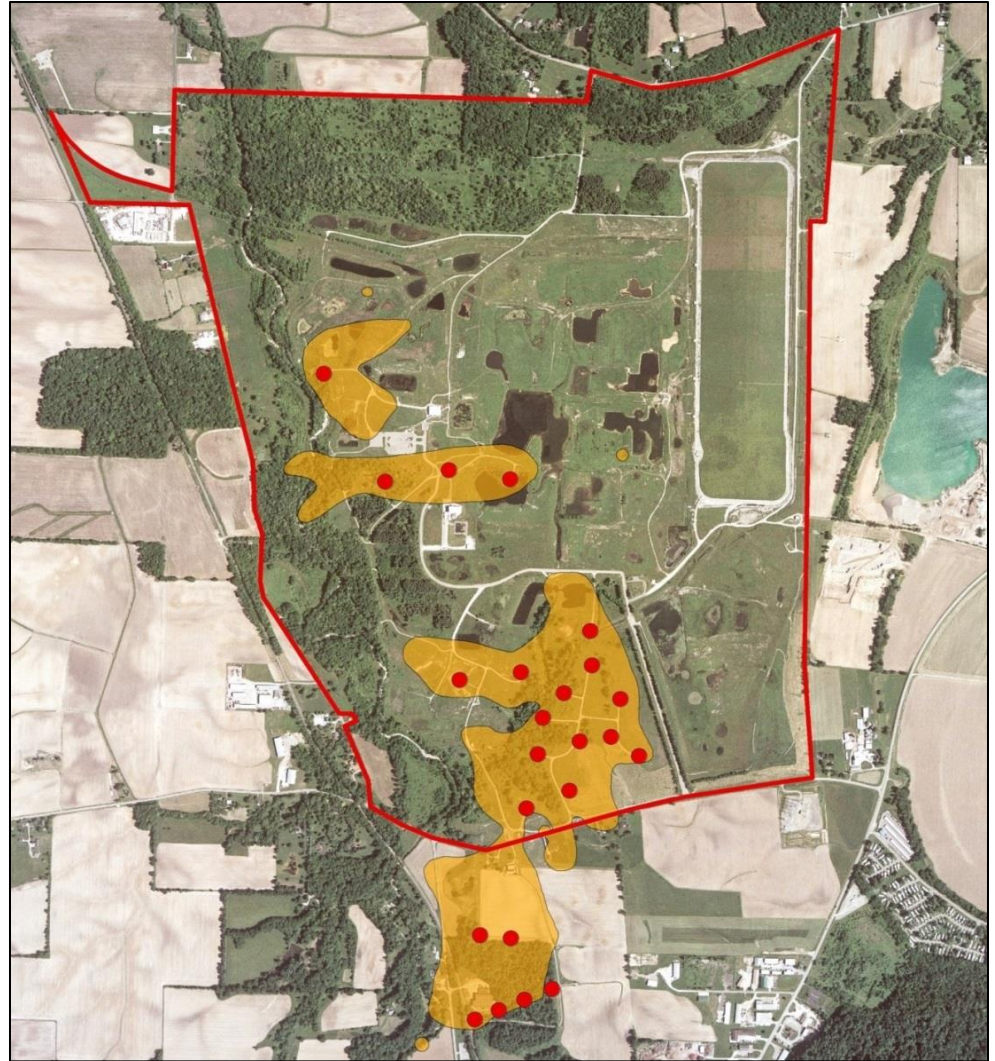
Fernald Preserve



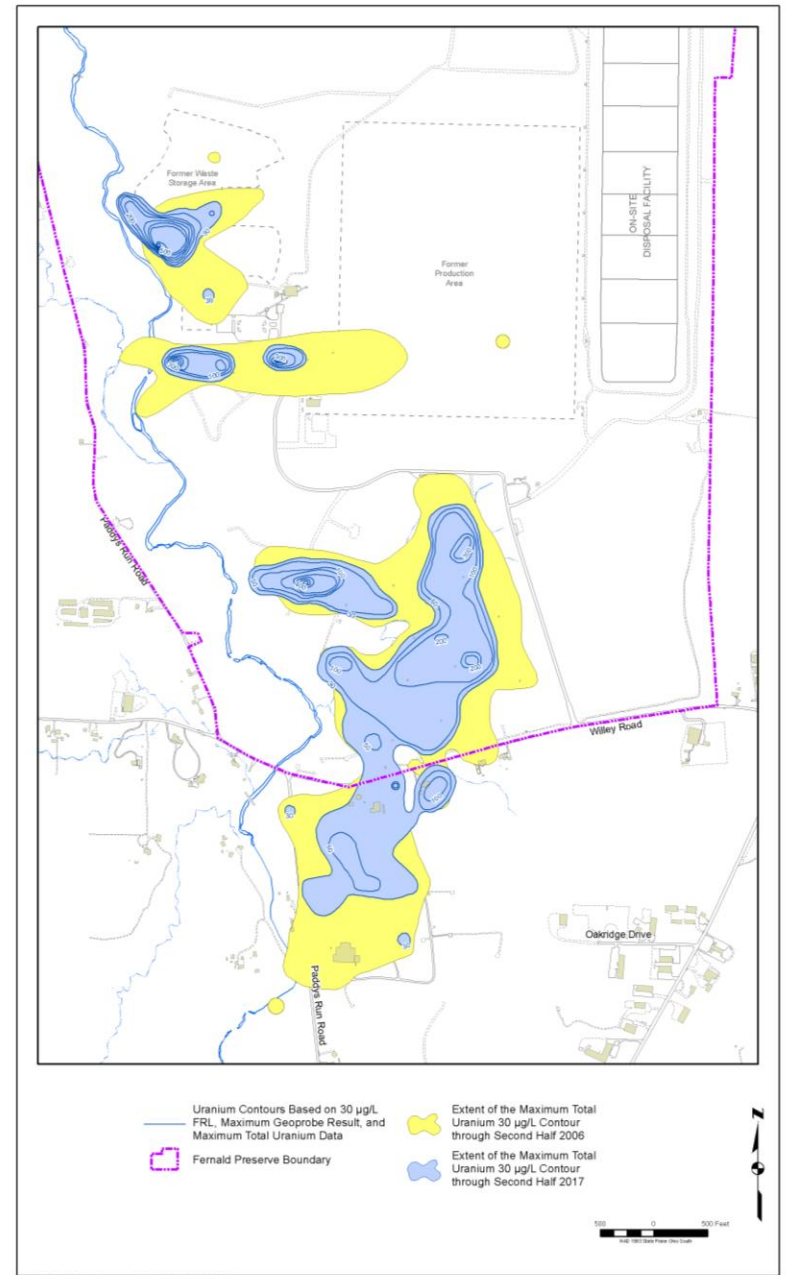
Uranium Plume 2006



2005 Design (23 Extraction Wells) Identified on the 2006 Uranium Plume



Uranium Plume Comparison 2006/2017



Cleanup Challenges

- Decreasing P&T efficiency over time
- Iron Plugging in the extraction wells
- Concentration rebound under former source areas
- Exit Strategy

Decreased P&T Efficiency Over Time

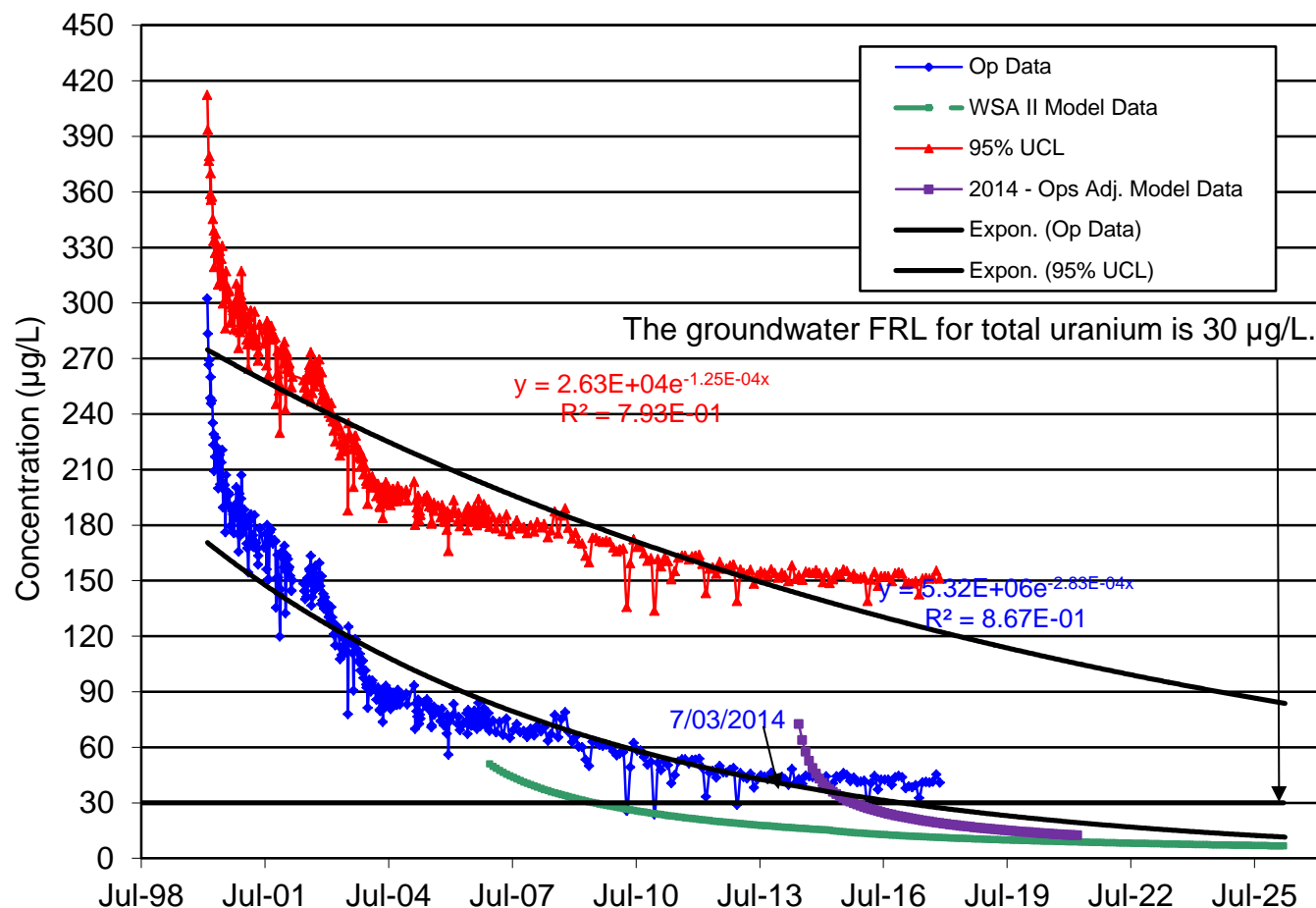
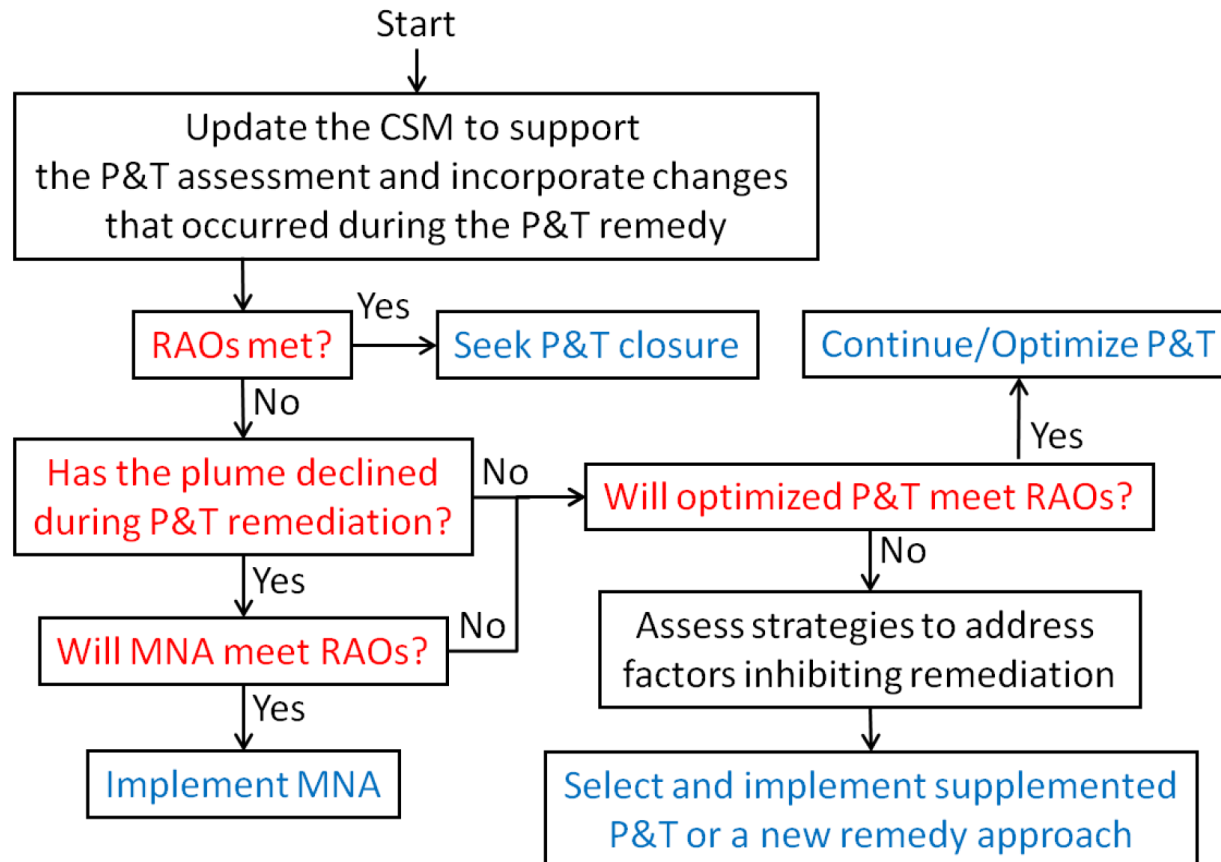


FIGURE A.1-29. TOTAL URANIUM CONCENTRATION VS. TIME PLOT FOR EXTRACTION WELL 32447 (EW-23) WITH REGRESSION ANALYSIS

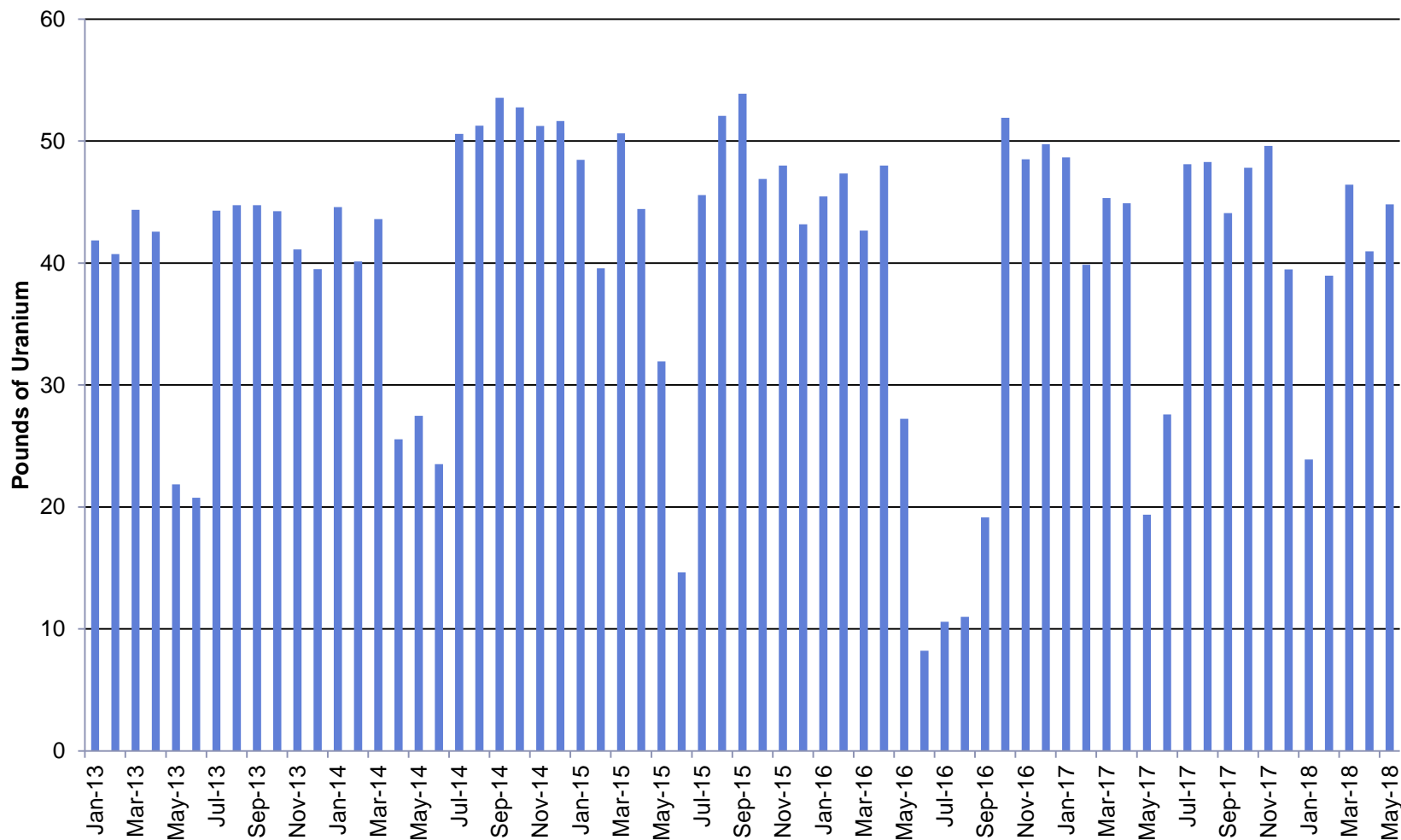
Performance Assessment of Pump and Treat Remedies

- Study prepared for the U.S. DOE. Performance Assessment for Pump and Treat Closure or Transition, M.J. Truex and others, September 2015, Pacific Northwest National Laboratory.



Uranium Removed from the Great Miami Aquifer

- Impact of P&T Optimization on Pounds of Uranium removed.



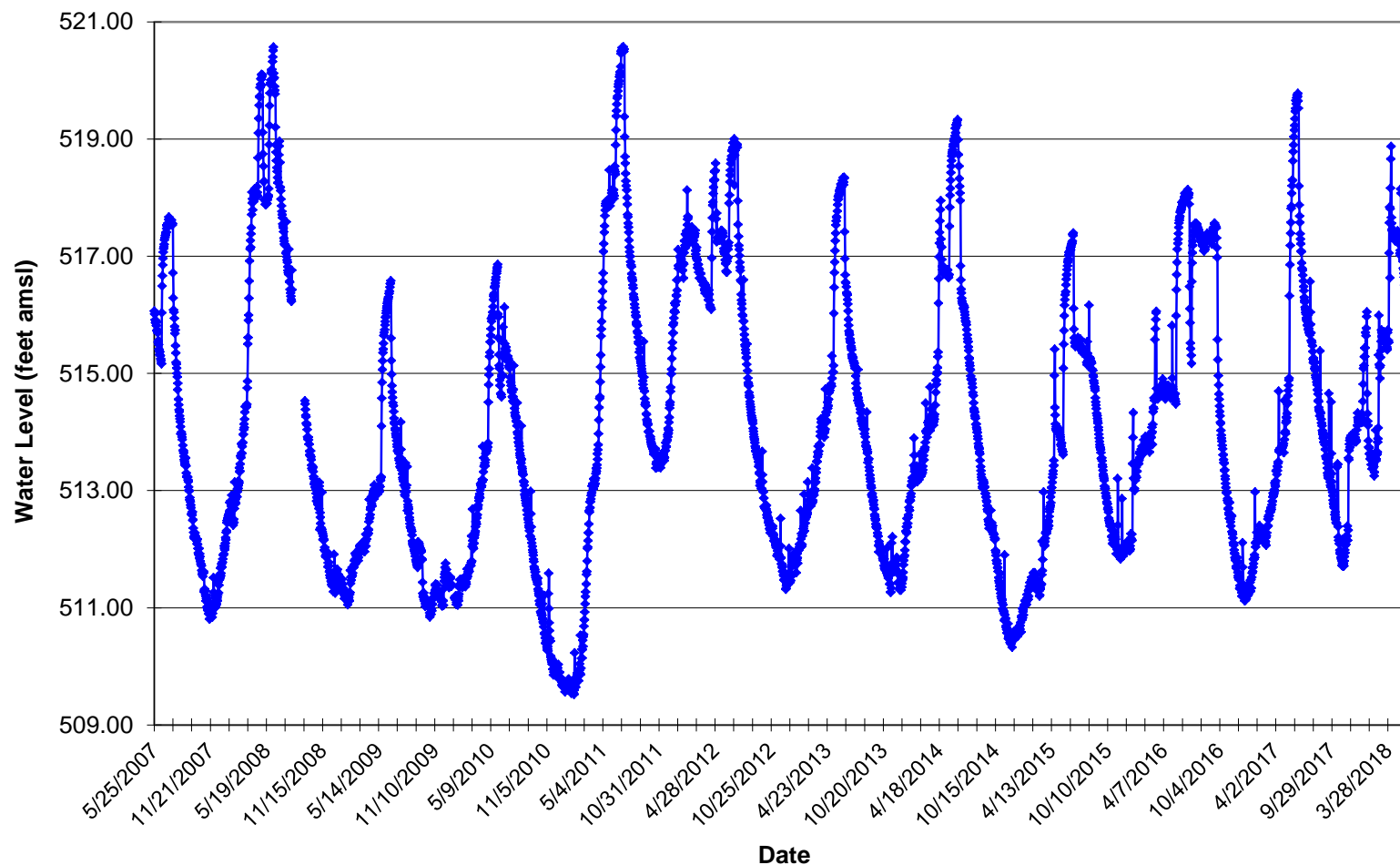
Pumps and Iron Fouling

New and Used

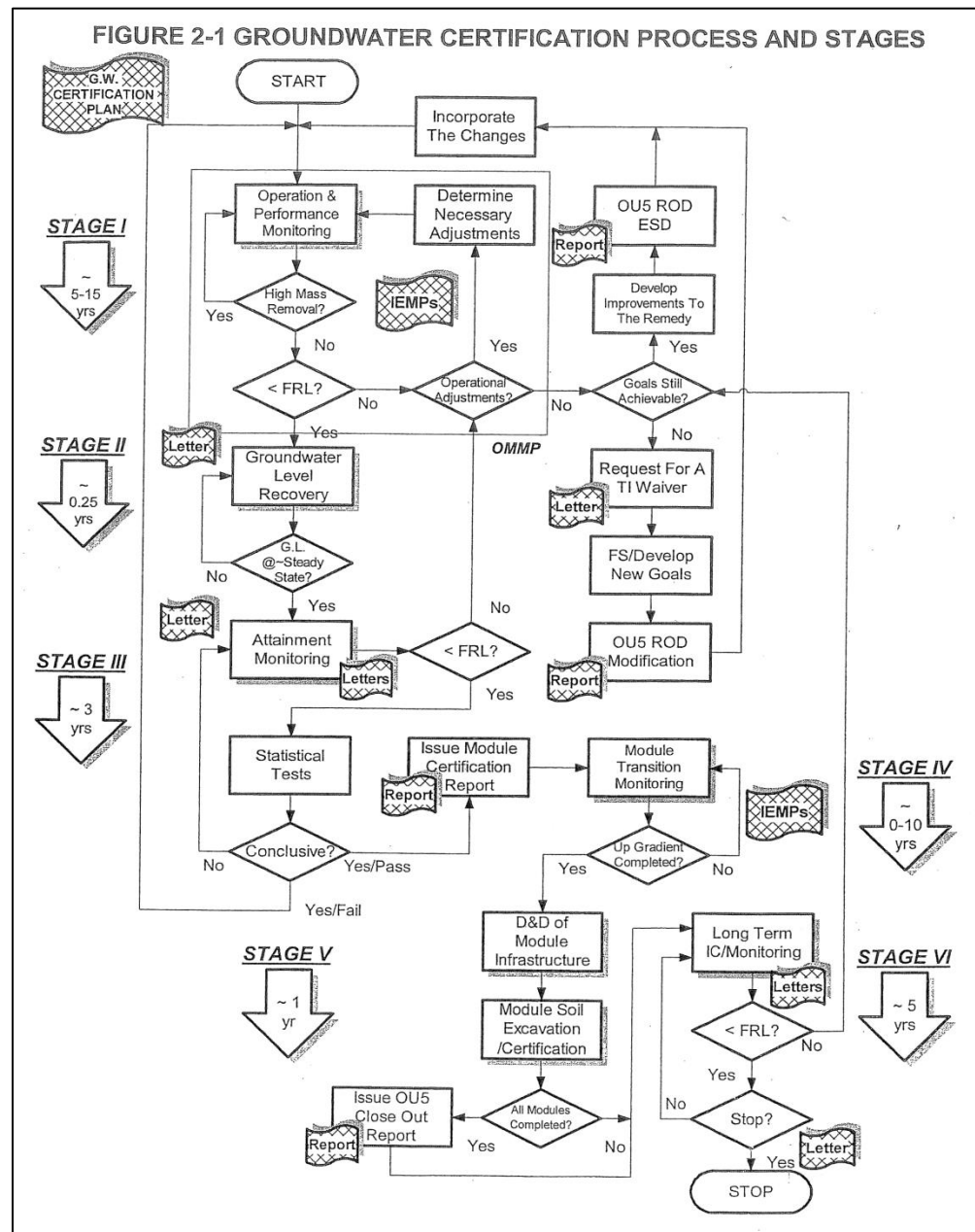


Concentration Rebound Under Former Source Area

Water Levels in Monitoring Well 62433
May 25, 2007 through June 07, 2018



Exit Strategy



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